GA 113 .EMD-82-82

REPORT BY THE U.S.

General Accounting Office

Are Leaseholders Adequately Exploring For Oil And Gas On Federal Lands?

COMPLETED
70

Changes to the onshore oil and gas leasing system are periodically proposed based on perceived inadequacies of leaseholder activity. This report provides data, previously lacking, concerning the diligence of industry operations and the speculator's impact on lease development.

GAO found that

--development efforts are directed at lands with the best potential and little additional production would be gained by requiring greater industry activity on Federal lands and

--speculators have a mixed effect on development and the impact on revenues and production from attempts to eliminate them is uncertain.

The Department of the Interior should continue its efforts to speed up lease development by eliminating unnecessary leasing related delays.

GAO/EMD-82-82
AUGUST 23, 1982

Request for copies of GAO reports should be sent to:

U.S. General Accounting Office
Document Handling and Information
Services Facility
P.O. Box 6015
Gaithersburg, Md. 20760

Telephone (202) 275-6241

The first five copies of individual reports are free of charge. Additional copies of bound audit reports are $3.25 each. Additional copies of unbound report (i.e., letter reports) and most other publications are $1.00 each. There will be a 25% discount on all orders for 100 or more copies mailed to a single address. Sales orders must be prepaid on a cash, check, or money order basis. Check should be made out to the "Superintendent of Documents".

BEST DOCUMENT AVAILABLE

UNITED STATES GENERAL ACCOUNTING OFFICE
WASHINGTON, D.C. 20548

ENERGY AND MINERALS
DIVISION

B-204492

The Honorable James A. McClure
Chairman, Committee on Energy
and Natural Resources
United States Senate

The Honorable John W. Warner
Chairman, Subcommittee on Energy
and Mineral Resources
Committee on Energy and Natural
Resources
United States Senate

The Honorable John D. Dingell
Chairman, Subcommittee on Oversight
and Investigations
Committee on Energy and Commerce
House of Representatives

The Honorable James D. Santini
Chairman, Subcommittee on Mines
and Mining
Committee on Interior and Insular
Affairs
House of Representatives

The General Accounting Office has reviewed the Federal onshore oil and gas leasing system to determine if leaseholders are adequately exploring their leases. This system has been criticized as having numerous problems but factual evidence to substantiate them is lacking. Because of your expressed interest in Federal leasing, this report is being forwarded to make you aware of our review results. The report addresses the extent and nature of activities of the two primary leaseholders, industry and speculators, as well as other factors which affect lease development. We believe this information should be considered before any changes are made to Federal leasing.

J. Dexter Peach
Director

BEST DOCUMENT AVAILABLE

BEST DOCUMENT AVAILABLE

REPORT BY THE U.S.
GENERAL ACCOUNTING OFFICE

ARE LEASEHOLDERS ADEQUATELY EXPLORING FOR OIL AND GAS ON FEDERAL LANDS?

D I G E S T

The Federal onshore oil and gas leasing system contributes daily about 410,000 barrels of oil and 2.8 million cubic feet of gas to our national needs, as well as millions of dollars annually in Federal receipts. But, it has been widely criticized. Problems cited include a large scale involvement of speculators, lack of requirements for active lease development, a lottery system that encourages abuses, and failure to achieve fair market value for the leases. This report addresses the first two problems, i.e., the extent and nature of activity of the two predominant leaseholders--industry and speculators--and what, if any, actions may be needed to influence their activity.

MANY FEDERAL LEASES ARE NOT EXPLORED OR DEVELOPED

To determine the extent of industry activity on Federal lands, GAO sampled Federal leases in four States and found that only about 8 percent were drilled. Over one-half of the leases drilled (4 percent of the total) were drilled in less than 5 years. Some leases were drilled after the 10-year primary term expired. (See p. 7.)

Activities other than drilling, such as geophysical and other exploration efforts, also help to identify the resource potential of a lease, and provide a measure of lessee activity. GAO was not able to determine conclusively the extent to which these other efforts were conducted, since they cannot always be related to a particular lease. But, Federal lessees interviewed who hold about 20 percent of the sample leases indicated that slightly less than half of their leases were subjected to development efforts. (See p. 9.)

Industry oil and gas activity has been increasing substantially nationwide. However, rig usage has been decreasing in 1982. And, while there are indications that Federal leases may not be receiving a proportionate share of industry's national

BEST DOCUMENT AVAILABLE

drilling effort, much of the Nation's petroleum resources are in areas with relatively little Federal land. Those areas that do have considerable Federal acreage appear to be receiving a commensurate share of industry activity. (See pp. 10 and 16.)

LITTLE INCREASED PRODUCTION IS LIKELY TO RESULT FROM REQUIRING INDUSTRY ACTIVITY

Statistics on wells drilled per lease do not give a complete picture of industry activity. Much of the acreage leased is apparently of marginal potential, or in areas with little activity, either Federal or non-Federal.

Industry's drilling activity on Federal lands appears reasonable in relation to activity on non-Federal lands. A required increase in Federal drilling may be done at the expense of activity on non-Federal lands, or result in excess leases being dropped. Thus, a drilling requirement may not contribute to our national production effort.

GAO found that industry may be taking advantage of certain lease extension provisions, but that this is not a significant problem. Only 1.5 percent of the sample leases had received an extension. Most involved unit agreements which resulted in drilling, and occasionally in production. (See p. 25.)

THE SPECULATOR HAS A MIXED IMPACT ON DEVELOPMENT

Many individuals obtain leases, primarily through the lottery system, who may not have the inclination or the ability to develop leases. GAO's sample of lottery leases showed that apparent speculators originally held 57 percent of the leases. These speculators cause some delay to industry in getting the leases and may inhibit efficient development. They also add some cost to development when assigning the leases and retaining a share of the production. The cost industry incurs to acquire leases from speculators could not be determined. However, GAO found that all but 15 percent of the leases they obtained were transferred to industry, generally within 2 years of lease issuance. Lessee

BEST DOCUMENT AVAILABLE

THE SPECULATOR HAS A MIXED IMPACT ON DEVELOPMENT

GAO also wanted to know just what impact the speculator is having on lease development. Many individuals obtain leases, primarily through the lottery system, who may not have the inclination or the ability to develop leases. GAO's sample of lottery leases showed that apparent speculators originally held 57 percent of the leases. These speculators do prevent the leases from being issued directly to industry and may inhibit efficient development. They also add some cost to development when assigning the leases and retain a share of the production. However, our review found that all but 15 percent of the leases they obtained were transferred to industry, generally within 2 years of lease issuance. Lessee interviews suggest that many of the remaining leases are simply not of interest to industry, and eliminating the speculator would probably not greatly influence exploration activity. (See p. 31.)

The cost industry incurs to acquire the leases could not be determined, but just over 20 percent of the lessees GAO interviewed thought speculators were a problem while about two-thirds offered no opinion. On the other hand, the speculator contributes significant sums to the Federal and State treasuries through payment of filing fees and rentals and provides an opportunity for the general public to share in a publicly owned resource. (See p. 34.)

Eliminating the speculator would not likely have any major adverse effect on development, but it might adversely affect revenues. Any effort to reduce the number of individual speculators could also negatively impact on the smaller independent. (See p. 36.)

OTHER FACTORS AFFECTING TIMELY DEVELOPMENT

GAO found, and selected lessees pointed out, however, other factors that may be delaying or inhibiting but not preventing development

--a large backlog of unleased tracts and unprocessed lease assignments, and

--delays in Interior's processing of drilling permits and other clearances.

BEST DOCUMENT AVAILABLE

--much Federal leasing takes place in areas where the oil industry has not yet developed;

--most actions that might spur activity would reduce industry's flexibility, and would not likely enhance the Nation's oil and gas development;

--the speculator does not appear to be materially delaying development;

--the speculator provides substantial Federal receipts and his presence represents an opportunity for the general public to share in a publicly owned resource.

Interior should continue its efforts to eliminate unnecessary leasing related delays. Some of these factors may be preventing industry from developing Federal lands that might otherwise be given a higher priority in their development plans. These factors include

--the backlog of assignments and lease offerings, and

--delays in processing drilling permits and other clearances.

The effect on either production or revenues from attempts to eliminate the speculator is so uncertain that they should be approached with caution. The Department of the Interior should closely watch the impact of its recently increased filing fee as well as the increased rental on independent oil companies and on Federal receipts.

AGENCY COMMENTS

GAO obtained comments from the Department of the Interior. (See app. III.) The Department is in general agreement with the report conclusions and suggestion to monitor the impact of its increased filing fee and rental. Other comments and GAO's evaluation are presented on page 48.

BEST DOCUMENT AVAILABLE

Department of the Interior closely watch the impact of its increased filing fee as well as the increased rental on independent oil companies and on Federal receipts.

AGENCY COMMENTS

GAO obtained comments from the Department of the Interior. (See app. III.) The Department is in general agreement with the report conclusions and suggestion to monitor the impact of its increased filing fee and rental. Other general and some specific comments were made. These comments and GAO's evaluation are presented on page 48.

Contents

		Page
DIGEST		i
CHAPTER		
1	INTRODUCTION	1
	Exploration versus development	2
	Current oil and gas leasing system	2
	Pertinent legislation and regulations	4
	Objectives, scope, and methodology	4
2	EXTENT OF EXPLORATION IS LIMITED BUT APPEARS TO BE INCREASING	7
	Sample indicates little drilling activity	7
	Exploration activity is increasing nationwide	10
	Exploration is expensive and generally unsuccessful	12
	Conclusions	13
3	SHOULD INDUSTRY BE REQUIRED TO BE MORE DILIGENT?	14
	How industry operates	14
	Intensity of industry effort	16
	Why is there so little apparent activity on Federal lands?	20
	Other industry-related factors affecting activity	24
	Diligence authority of the Secretary of the Interior	28
	Conclusions	29
4	THE INDIVIDUAL SPECULATOR IN OIL AND GAS EXPLORATION - AN IMPEDIMENT OR STIMULANT?	31
	Who are the individual speculators?	31
	Federal leasing system encourages private citizen speculation	31
	The individual speculator - a negative or positive effect?	34
	Changes to eliminate speculators	36
	Proposed increase to basic royalty rate	39
	Proliferation of small tracts	40
	Conclusions	40

		Page
5	POSSIBLE FEDERAL IMPEDIMENTS TO INDUSTRY EXPLORATION	42
	Lease assignment and lease issuance backlog	42
	Delays in obtaining permits to drill	43
	Restricted access to Federal lands	44
	Lessee views on changes needed to improve exploration and development	45
	Conclusions	46
6	CONCLUSIONS, AGENCY COMMENTS, AND OUR EVALUATION	47
	Conclusions	47
	Agency comments and our evaluation	48
APPENDIX		
I	Measures of exploration activity used within the oil and gas industry	51
II	Sampling error details	52
III	Letter dated June 10, 1982, from the Department of the Interior commenting on this report	54

ABBREVIATIONS

BLM	Bureau of Land Management
GAO	General Accounting Office
USGS	Geological Survey
KGS	Known Geologic Structure

CHAPTER 1

INTRODUCTION

Over the years, the present oil and gas leasing system has been severely criticized. Many options have been, and are being, actively considered to correct perceived problems through amendment of the Mineral Leasing Act and modification of existing regulations. Proposals made include shorter lease terms, increasing the cost of obtaining and keeping a lease, and establishing a more competitive or all competitive leasing system. This report discusses whether lessees are making a diligent effort to explore and develop Federal leases.

A key issue has been the extent of industry's efforts to explore and develop its leases. Many critics of the present system feel that industry is either remiss in exploration and/or is hindered from doing so by speculators, excessive regulations, and other factors. Specifically, these perceived criticisms tend to concentrate on the following:

--Lack of provisions and/or enforcement of existing regulations requiring diligent exploration.

--Participation in the leasing system by speculators having neither the desire nor the ability to produce oil and gas, resulting in delays in getting the leases into the hands of industry, numerous assignments with high-cost overriding royalties, and dividing leases into small, less geologically viable tracts.

--Severe environmental and access restrictions on leased land.

--Bureaucratic "red tape" that impedes lease development.

--A predominantly noncompetitive system that fails to achieve fair market value for leased land.

A major problem in resolving these issues has been a lack of data on how the present system is working. No compiled data exists on such things as the extent of exploration on Federal leases, and the extent and impact of speculator involvement on oil and gas leasing. In effect, solutions are being proposed without knowing how lease exploration may be affected and if problems do exist. We attempted to answer many of these questions by evaluating the extent of lessee activity, the impact of the speculator, and other factors that may be impeding lease exploration. Such information would be invaluable to policy makers considering possible modifications to the present system.

Some impediments to leasing have been addressed in prior GAO reports. Several reports have been issued by GAO in the past 3 years dealing with onshore oil and gas leasing. These reports

addressed weaknesses in the lottery system, possible impacts of a more competitive leasing system, ways to streamline leasing, and actions needed to increase lease development (focused on withdrawn lands, lease restrictions, and drilling permit approval).

This report does not address all criticisms of the Federal leasing system, but does address those directly concerning industry exploration, such as the impact of individual speculators, the possible need for more stringent requirements that industry explore its leases, and other possible impediments. This report concentrates on possible changes within the present system. Possible revisions to the lottery system will be addressed in future GAO work.

EXPLORATION VS. DEVELOPMENT

Two types of wells are generally drilled on oil and gas leases--exploration and development. Exploration drilling discovers the presence or limits of oil/gas. Development drilling produces after discovery. Throughout the report we talk about exploring and/or developing a lease--not solely in the context of drilling--but also including activities a lessee may be doing to determine the existence of oil/gas resources underlying a lease. These activities include mapping, area histories, surveys, geology, as well as exploration drilling.

CURRENT OIL AND GAS LEASING SYSTEM

The Federal onshore oil and gas leasing system provides the United States with significant volumes of oil and gas, and generates large sums of money for the Federal Government and involved States. On December 31, 1980, there were 117,818 Federal onshore oil and gas leases covering 108.9 million acres. 1/ About 40 percent of the 261 million acres considered by the U.S. Geological Survey (USGS) as of July 1, 1980, to be prospectively valuable Federal land has been leased through fiscal year 1980.

The production from all Federal lands (onshore) for fiscal year 1980 was 150.6 million barrels of oil and 1,033.8 billion cubic feet of gas, which is about 5 percent of the total oil and gas production in the United States. These production figures represent a decrease from 1979. Between the 2 years, oil production decreased more than 2 million barrels, and gas about 2 billion cubic feet.

Receipts in fiscal year 1981 totaled: $678 million in royalties, rentals, and bonus bids with $43 million in filing fees. Revenues are rising rapidly each year.

1/ Excluding 14,320 Indian leases covering 3.7 million acres.

Since 1970, drilling on public land has generally increased, the number of wells completed in 1980 is the highest since an upward trend began in 1972, and the highest as far back as 1954.

Leasing methods

The Bureau of Land Management is responsible for issuing all leases on Federal lands, in accordance with the provisions of the Mineral Leasing Act of 1920, as amended, and the Mineral Leasing Act of 1947 for Acquired Lands. Three leasing methods are used, one is competitive and the others are noncompetitive, depending on known production and on whether or not the land was previously leased:

--Competitive leasing. By law, any tract located within a known geologic structure of a producing oil or gas field must be leased by competitive bidding. Only a small percentage of land, less than 5 percent, is leased in this way. The boundaries of a known geologic structure are determined by the Geological Survey using available well data and other geologic information. Competitive leases are limited by law to a maximum of 640 acres with a lease term of 5 years and an annual rental of not less than $2 an acre.

--Regular, or over-the-counter, leasing. Land not leased before is available to the first qualified applicant who submits an application along with the first year's rental, and a $75 filing fee (increased from $25 February 19, 1982). The tracts are not directly offered to the public, but are generally leased by potential lessees who examine maps and title data in the Bureau of Land Management's public rooms. The Department of the Interior estimates about 30 percent of the land is still leased in this way. The lease term is 10 years with annual rentals of $1 an acre. The maximum tract size is 10,240 acres.

--Simultaneous, or lottery leasing. Noncompetitive tracts becoming available for re-lease are leased through the lottery. The majority of Federal lands are leased in this way. As noncompetitive leases expire or otherwise become available, they are re-posted for bimonthly drawings. For a $75 filing fee (increased from $10 to $25 effective October 1, 1981, and then to current fee on date shown above), any U.S. citizen, group of citizens, corporation or municipality may file an application for a particular lease. The winning lessee is randomly selected. The term is for 10 years with annual rentals of $1 an acre and a maximum lease size of 10,240 acres. In February of this year, the terms were modified to provide that the rental be increased to $3 an acre after the fifth year.

PERTINENT LEGISLATION AND REGULATIONS

The purpose of the Mineral Leasing Act of 1920, and the Mineral Leasing Act for Acquired Lands of 1947 is to promote the mining of oil and gas on public domain and acquired lands. The only provision relating to development time frames is the primary lease terms, i.e., that competitive leases will terminate in 5 years, and noncompetitive leases in 10 years, unless production is attained, or drilling is in process.

Regulations affecting lease terms

Leases can, however, be extended without achieving production under certain conditions. A lease will be extended 2 years if drilling is actively underway at the end of the primary lease term. Extensions can also be obtained by forming and disbanding unit agreements.

Unit agreements are formed when two or more adjacent lessees agree to develop their leases as one. This precludes drilling unnecessarily on each lease, or in less than optimum locations, and enables cost sharing among the lessees. Under unit agreements wells are required within 6-month intervals after each well is completed until a well is capable of producing in paying quantities. If oil or gas is discovered, the acreage overlying the deposit remains under lease for so long as production continues. Those lease areas in the agreement found not to be geologically covered by the producing well must be segregated from the unit, and these leases are granted a 2-year extension, or continue in effect for their remaining primary lease term, whichever is longer. If no producing wells are developed, or if the drilling requirements are not met, the unit is disbanded and all member leases are entitled to the 2-year extension.

Communitization agreements are also formed where well spacing restrictions do not permit each lessee to drill. These agreements are for a 2-year period. Upon termination of the agreement, the involved leases are granted a 2-year extension.

Leases can also be transferred, or assigned. It is common practice for the original lessee to assign all or part of his lease interest to one or more other parties, the latter case in effect creating two leases from one. The assignor generally retains a certain percentage of any future production, referred to as an overriding royalty. Many leases are assigned several times, creating complex ownership patterns, and can result in leases being split into several smaller leases.

OBJECTIVES, SCOPE, AND METHODOLOGY

Our objective was to determine if lessees are making a diligent effort to explore and develop Federal leases and, if not, to determine the causes and possible solutions. To evaluate the

extent of exploration and development, we sought answers to the following questions:

--What are the objectives and policies of the onshore oil and gas leasing system?

--To what extent are Federal onshore oil and gas leases being drilled?

--What factors are inhibiting lessees from exploring and developing their leases?

--What actions can the Federal Government take to achieve diligent exploration of its onshore oil and gas leases?

To meet our objectives, we took a statistical sample and reviewed applicable lease and well files to determine the extent of exploration on Federal leases. We also conducted interviews mainly to identify reasons why the leases may not have been drilled.

--First, we identified a population of 79,042 leases in Wyoming, Utah, Colorado, and New Mexico. These four States contain about 65 percent of the Federal onshore oil and gas leases issued as of September 30, 1980, and 59 percent of the acreage leased in the lower 48 States. From a listing provided by BLM, we selected independent random samples in each State for a total sample size of 625 leases (estimates from this sample are all subject to sampling errors stated at the 95 percent confidence level). Serial registers and lease files located at BLM offices in the four States were used to identify lessees and the extent to which exploration activities were conducted. Also, files maintained by USGS on drilling activity were reviewed relative to leases in our sample. From the sample, we estimate that 73,626 are competitive and noncompetitive oil and gas leases. Of these, 71,890 are noncompetitive leases issued through the lottery (44,213) and over-the-counter (27,677). The remaining 1,736 leases were issued competitively.

--Second, a questionnaire was developed to interview a cross-section of 54 lessees from our sample. These lessees were located in the four sample States. We interviewed as many lessees as possible within the time frames established for our review. Lessees were questioned as to their exploration actions and intentions regarding the 118 leases they held, their views on other impediments to development, and the likely impact of certain possible changes to the administration of the leasing system.

We reviewed agency records and talked to cognizant Interior Department officials in Denver, Colorado; Salt Lake City, Utah; Albuquerque and Santa Fe, New Mexico; Cheyenne and Casper, Wyoming; and Washington, D.C. This review was performed in accordance with

GAO's current "Standards for Audit of Governmental Organizations, Programs, Activities, and Functions."

We also interviewed State government officials in the four States covered in our review, representatives of major and independent oil companies holding leases in the four States, and individual lessees.

- - - -

The following chapter discusses the extent of industry activity both on Federal and non-Federal lands. Chapter 3 analyzes the adequacy of industry's efforts; chapter 4 discusses the impact of the speculator on industry development; and chapter 5 discusses possible Federal impediments to industry exploration.

CHAPTER 2

EXTENT OF EXPLORATION IS LIMITED BUT APPEARS TO BE INCREASING

Our random sample confirmed that most Federal oil and gas leases in the four States sampled are not drilled. Other exploration activities, primarily seismic and other geophysical efforts portray industry activity, but they are not usually done on an individual lease basis. However, both geophysical and drilling activity is increasing dramatically on Federal as well as non-Federal lands, and other measures of industry activity also show their level of effort rising. These measures suggest considerably more activity than is indicated solely by examining wells drilled, although still, most Federal leases are apparently not drilled, and many are not explored geophysically either.

SAMPLE INDICATES LITTLE DRILLING ACTIVITY

To identify the extent of exploration activity on Federal leases, a statistical sample of oil and gas leases in the States of Wyoming, Utah, New Mexico, and Colorado was taken. Although exploration activities include other things besides drilling, our sample disclosed that very little of the leased land is drilled on a per lease basis and few applications for a permit to drill were filed.

Of the 73,626 leases (competitive and noncompetitive) covered by our sample, only 5,984 leases, or 8.13 percent, were drilled. Thus, the majority of the Federal land leased between 1964 and 1979 in the four States has not been drilled. As shown below, about 90 percent of our sample leases have had no drilling activity:

Drilling Activity Based on Sample Leases

(Competitive and Noncompetitive)

	Number of leases	Percent
Drilled, with production	4,777	6.49
Drilled, but with no production	1,207	1.64
Subtotal-leases drilled	5,984	8.13
Not drilled, but permit requested	461	.62
No drilling activity	67,181	91.25
Total leases	73,626	100.00

Note: See appendix II for details on sampling errors.

Applications for permits to drill had been filed on 461 leases and could increase the percentage of leases drilled. However, based on our past work, just because a permit is filed does not assure that drilling will take place. In a prior report 1/, we found actual drilling occurred on only 79 percent of the land for which permits were approved by USGS during calendar years 1977-1979. Also, several of these permits were over 1 year old which indicated that drilling may not be undertaken.

When drilling occurs

Our sample indicated that drilling may take place at any time. Over one-half of the wells that were drilled on leases in our sample were drilled within 5 years of lease issuance, with the greatest number being drilled during the fourth year, and some leases were drilled as early as 3 months after issuance. Considerable drilling also took place during the second 5-year period, with the drilling spread fairly evenly over the years covered. However, an appreciable amount of drilling also took place on leases extended past their primary termination date, as shown below:

Age of leases at time of drilling

Lease age in years	Number of leases	Percent
Less than 5	3,041	50.82
Five or more but less than 10	2,112	35.29
Ten or more	831	13.89
Total leases drilled	5,984	100.00

Note: See appendix II for details on sampling errors.

This suggests that if a lease is considered by the lessee to have high oil and gas potential, leases can be drilled in less than 5 years. However, some lessees indicated to us that a 5-year lease may be an adequate amount of time to drill in a well established area, but not in a wildcat area. Many other leases are drilled before the 10-year primary lease term expires, and some

1/"Actions Needed to Increase Federal Onshore Oil and Gas Exploration and Development," EMD-81-40, Feb. 11, 1981.

lease may be an adequate amount of time to drill in a well established area, but not in a wildcat area. Many other leases are drilled before the 10-year primary lease term expires, and some are even drilled after 10 years, as discussed in chapter 3. The bulk of the undrilled leases in our sample are apparently viewed by lessees to be of relatively low potential.

Limited geophysical efforts conducted

Geophysical work normally precedes drilling, and is also a valid indicator of industry's effort towards development. However, besides there being little drilling, only limited geophysical activity has been conducted on leases included in our sample. Interviews with a selected cross-section of lessees, located in the four sample States, holding undrilled leases indicates that a little less than half the 118 leases covered have been subject to some effort to identify their resources. Data on geophysical work done on Federal lands over 2 years ago was not maintained in active case files. We were therefore unable to precisely measure this activity relative to the leases in our sample. However, some information on geophysical activity was obtained from lessee interviews. Based on the exploration activities of the sample lessees and other lessees in the lease areas, lessees indicated that potential is often relatively low, uncertain, or unknown.

According to these lessees, some wells have been drilled in the vicinity of the sample leases which resulted in "dry holes" or with discovery in quantities too small to be produced. During the interviews, many lessees produced maps to show the areas of geophysical activity. In some cases, lessees were aware of drilling or geophysical activity that had been conducted by another party or previous lessee. Other exploration activity such as mapping, surveys, and area histories was not presented by using written documentation but was given to us verbally by the lessees.

Following is a chart showing the number of leases in which the lessee had either done exploration work or was aware of (and presumably basing his decisions on) such work done by others in the vicinity.

BEST DOCUMENT AVAILABLE

Exploration Activity on Sample Leases

	Number of leases		Percent	
Seismic				
--in lease area	14		11	
--on or included sample leases	22	36	19	30
Other Exploration Activity				
--surface/subsurface mapping	10		8	
--area history	5		4	
--surveys (soil, aerial, gravity, and magnetic)	3		3	
--surface/subsurface geology	2	20	2	17
No exploration activity		62		53
Total		118		100

EXPLORATION ACTIVITY IS INCREASING NATIONWIDE

Although our sample data indicates most Federal leases in the selected States are not being drilled, exploration activity, including drilling, is nonetheless increasing nationwide on both Federal and non-Federal lands. Statistical data for the past 10-year period, 1971-1980, shows domestic oil and gas exploration in the United States has about doubled since the energy crisis of 1973. The Federal share has consistently been about 6 percent of the total national onshore effort:

Onshore Well Completions in the United States 1971-1980

Year	Total wells drilled	Wells on all Federal Lands	
		Number	Percent
1971	27,300	1,651	6.0
1972	28,755	1,956	6.8
1973	27,602	1,848	6.7
1974	32,879	2,312	7.0
1975	39,065	2,277	5.8
1976	41,425	2,032	4.9
1977	46,437	2,619	5.6
1978	48,483	2,690	5.5
1979	51,217	2,682	5.2
1980	62,421	3,295	5.3

Source: General Accounting Office, derived from Geological Survey and American Petroleum Institute data.

Although the percentage of drilling of Federal land is relatively low, certain factors influence this (see p. 16). (Exploratory wells, as distinguished from developmental wells which are drilled to achieve production after discovery, are a truer measure of exploration effort than the total wells depicted above, but we were unable to separate exploratory wells on Federal lands from the total national activity). Other measures of exploration activity included

--seismic crew months,

--rotary rig activity, and

--oil and gas exploration expenditures.

Again, there is no breakdown available between efforts on Federal vs. non-Federal lands, but they still demonstrate the increasing industry effort in recent years.

Following is a brief description of industry's activities in these categories. Detailed data is contained on the first two in appendix I.

Seismic crew months

Seismic or geophysical surveys are generally the first steps of exploration. Information collected by seismic field crews is processed by computer, and interpretive maps are prepared by geophysicists to pinpoint areas most likely to contain oil or gas.

Seismic activity is measured by average "crew month" which is defined as one seismic crew consisting of 25 people working one contract month or its equivalent. These crew months are a direct indicator of exploration activity.

In the United States for the 10-year period, crew month activity increased 61 percent, from 2,755 in 1971 to 4,444 in 1980. The highest crew months activity was in 1980. The four sample States also showed a substantial increase for this period. The highest crew months activity was in 1974 with 661. The next 3 years showed a decline followed by an increase for 3 years. In 1980, the activity had climbed back to 639 making it the second highest activity year.

Rotary rig activity

A rotary rig is the type of apparatus used in drilling oil and gas wells. The actual rig count is done on a weekly basis and the rig activity shown for any other period is an average figure. The average onshore rotary rig activity for the four sample States as well as the total United States has increased substantially in the 10-year period--from 891 in 1971 to 2,683 in 1980, or three fold. For the week of May 3, 1982, the actual onshore rig activity was 3,053. The rig activity began declining after reaching 4,252 the last week of 1981 and has continued to decline in 1982.

BEST DOCUMENT AVAILABLE

EXPLORATION IS EXPENSIVE AND GENERALLY UNSUCCESSFUL

It should be emphasized that drilling for oil and gas is a risky and expensive proposition. The success rate for exploratory wells is quite low and the cost is quite high.

The average onshore well drilled in the United States in 1979 was 4,763 feet deep and cost $272,346, or $57.18 a foot. In some areas, such as the Rocky Mountains, where activity on Federal lands is concentrated, the depths drilled and costs involved are greater; for example, wells in Wyoming in 1979 averaged nearly 7,700 feet and $734,000. Wells approaching, and occasionally exceeding, 20,000 feet are becoming more frequent.

In spite of such expense, most wildcat wells 1/ are dry. Following is the success rate for all wildcat wells drilled in selected States in 1980 having significant Federal leasing activity. It can readily be seen that the chances of a successful well in an unproven area are extremely low:

Wildcat Wells Drilled--1980

State	Number of wells	Dry wells
Utah	91	70
Nevada	12	12
Montana	374	289
Wyoming	412	311
Total	889	682

Source: Independent Petroleum Association of America and American Petroleum Institute

Nationwide statistics further show the risk involved:

1/A type of exploratory well drilled in an area where neither oil or gas has ever been found.

BEST DOCUMENT AVAILABLE

Wildcat Wells Success Rate, 1972-1979

Results and field-size category	Million barrels of oil	or	Billion cu. ft. of gas	Odds of discovery
Dry hole				6 in 7
Very small	Up to 1		Up to 6	1 in 8
Small	1 - 10		6 - 60	1 in 66
Medium	10 - 50		60 - 300	1 in 686
Large	50 +		300 +	1 in 3591

Note: Data based on 46,690 wildcat wells drilled during period indicated.

Source: National Supply Company extrapolated from American Association of Petroleum Geologists and American Petroleum Institute data

Annual nationwide onshore oil and gas exploration expenditures have increased from $5.4 billion in 1973 to $9.5 billion in 1978. These increases may reflect to some extent the higher cost of conducting exploration, but also show that in this 6-year period funding has increased about 75 percent.

CONCLUSIONS

Drilling for oil and gas is a risky and expensive undertaking. Although about 90 percent of all Federal leases are not drilled, drilling on both Federal and non-Federal lands is increasing at a dramatic rate. For those Federal leases that are drilled, drilling may take place at any time, but the majority of drilling occurs in the first 5 years. While 5 years may be sufficient time to drill in instances where leases are located near known production areas, it may not be sufficient in isolated or otherwise difficult to drill areas. A shorter lease term would not necessarily speed overall development and may not enhance drilling even on Federal lands.

Although geophysical work is also a valid indicator of industry activity, and is increasing, we were unable to identify all such work done on Federal leases, or for that which we did identify, to relate it to a particular lease or leases. It appears that about half the leases in our sample have received some type of geophysical assessment.

- - - -

In light of the extremely small percentage of Federal leases being drilled, and many others not geophysically examined, we attempted to determine the cause for this and identify any possible needed actions to accelerate exploration and development on them. The following chapter presents the results of our analysis of industry activity.

CHAPTER 3

SHOULD INDUSTRY BE REQUIRED TO BE MORE DILIGENT?

An accurate assessment of industry's activity requires consideration of a number of factors, besides drilling, concerning how industry operates and how the leasing system itself works. After considering these factors, industry appears much more diligent than would first appear from looking at such statistics as wells drilled per lease. Although the Secretary of the Interior has the authority to require drilling, we doubt that any action to increase industry's activity would be successful, and we believe such action would probably not be a prudent step in any event.

HOW INDUSTRY OPERATES

A determination of whether actions should be taken to require lessee drilling requires some understanding of how the oil and gas industry operates. Specifically, it should be understood that

--the lessee takes several actions prior to drilling, which should probably also be considered diligent development of the lease;

--drilling is an extremely expensive and risky proposition;

--a lease tract's surface boundary bears no relationship to the subsurface geology, with the result that drilling on one tract of land may greatly influence the desirability of drilling on several nearby leases; or conversely,

--a producing well may satisfactorily recover the oil or gas underlying several leases; and

--industry tends to hold much more land than it is able to develop, but there is considerable inter-play among firms relative to assignments and farm-outs. 1/

Oil and gas lessees determine when lease exploration activities are conducted

Under the Mineral Leasing Act, each lease issued by the Secretary of the Interior shall contain provisions for the purpose of ensuring reasonable diligence in the "operation of the property." A standard lease provision requires lessees to diligently develop leases. The provision states that, after written

---

1/When a party agrees to drill a lease held by another lessee, an agreement is made between the parties involved which may include sharing drilling costs and any resulting production. The approval of BLM is not needed.

notice, the Secretary can require drilling when he deems it necessary. However, in practice, the lessees in the oil and gas business determine when and where wells will be drilled. They also determine what other pre-drilling exploration is necessary and when and where it will be conducted. Individual leases are usually obtained by developers to consolidate tracts in putting together a "play" 1/ covering numerous tracts. Each lease in that "play" will not be tested independently. Therefore, comparing the number of wells drilled in relation to the number of leases does not reflect the extent of exploration activity lessees may have conducted. Because the Secretary has not exercised his authority to require wells to be drilled, the leaseholder has the entire 5- or 10-year lease term in which to initiate drilling before the lease is terminated. Other options, as discussed in chapter 1, also exist in which the lessee can keep the lease past the primary lease term.

Determining which leases to obtain and develop

Companies or individuals in the business of exploring and developing oil and gas leases obtain not only Federal, but also State and private leases. Deciding which leases to obtain and explore is determined to a large extent by geophysical surveys and other means, such as studying area histories and conducting surface and subsurface mapping. Geophysical data may be obtained by a company interested in leasing a particular area or by geophysical companies who conduct seismic surveys on a speculative basis and then sell the data to interested lessees. These seismic data are interpreted, converted into structure maps, and used as a means of deciding potential areas for the discovery of oil or gas. A company or individual operator then tries to obtain leases that cover the "play."

Depending on the size of a company or operator, the number of leases held could range from a few to several hundred or even several thousand, and in one or more States. Those leases considered to have the highest resource potential are drilled first. The extent of drilling is based on available capital and degree of risk. Other factors such as weather and environmental restrictions may also affect drilling.

It is a practice of many oil and gas companies to acquire more leases than they can drill. This affords an inventory and choices of drill sites in a rapidly changing situation. When undrilled or unproductive leases are near the lease expiration date, they may be "farmed-out" to other companies to drill. Leases are constantly being evaluated on the basis of drilling results of other nearby lessees. In instances where a dry hole has been drilled on a nearby lease, the relative priority assigned particular leases held in the area may be downgraded. In other

---

1/A potential mineral resource area underlying leases.

instances, a lessee may delay drilling his lease(s) until tests being done by others in the area are completed.

INTENSITY OF INDUSTRY EFFORT

It was seen on page 10 that generally a little less than 6 percent of the total wells drilled in the United States are drilled on Federal land. This may seem small in comparison to the large amounts of Federal land which is about 21.6 percent of total acreage in the lower 48 States. Certain factors influence this, however. It should be remembered, for example, that much of the Federal acreage is withdrawn or otherwise restricted to preserve it for uses other than mineral development (see chapter 5).

Another key factor is that major oil/gas producing areas in the nation contain relatively little Federal land and oil and gas leasing. For example, following are the top 10 States in terms of Federal leasing activity compared with the top 10 States in other activity measures nationally:

BEST DOCUMENT AVAILABLE

States that Dominate Production and Drilling in the Oil and Gas Industry

1980

Oil/gas Production		Wells Drilled		Footage Drilled		Federal Activity		
State	MBPD	State	Wells	State	M Feet	State	Leases	Oil/gas production (MBPD)
1.Texas	5,969	1.Texas	19,253	1.Texas	99,573	1.Wyoming	35,454	288
2.Louisiana	4,368	2.Oklahoma	9,073	2.Oklahoma	42,446	2.Utah	17,128	28
3.Alaska	1,724	3.Kansas	5,161	3.Louisiana	31,180	3.New Mexico	13,558	331
4.Oklahoma	1,296	4.Louisiana	4,956	4.Kansas	17,436	4.Montana	11,825	22
5.California	1,118	5.Ohio	3,269	5.Ohio	11,581	5.Colorado	9,271	53
6.New Mexico	742	6.California	2,659	6.New Mexico	11,248	6.Nevada	9,034	2
7.Wyoming	544	7.Illinois	2,127	7.Wyoming	10,784	7.Mississippi	3,157	2
8.Kansas	506	8.Pennsylvania	2,020	8.California	7,369	8.North Dakota	2,490	30
9.Mississippi	182	9.New Mexico	1,966	9.West Virginia	6,452	9.Arizona	2,342	0
10.Colorado	169	10.West Virginia	1,717	10.Colorado	6,421	10.Idaho	2,295	0
						*13.Oklahoma	1,259	8
						*14.Louisiana	816	13
						*19.Texas	382	1
						*21.Kansas	326	6
						*26.Ohio	51	N
						*30.Illinois	12	N
						*31.Pennsylvania	7	0

Note: Natural gas production converted from cubic feet to equivalent barrels of oil.

*For comparison purposes, some States high in national production and drilling activity, but with little comparable Federal activity are also shown.

N - Negligible
MBPD - Thousand barrels per day
M - Thousand feet

Source: General Accounting Office derived from Geological Survey and Independent Petroleum Association of America data

Most domestic oil/gas activity takes place in the Gulf States, California, Oklahoma, and the Ohio/Illinois and Appalachian regions; areas with relatively little Federal lands and Federal leasing--New Mexico, Colorado, and Wyoming being the prominent exceptions. The lack of correlation between production and Federal leasing can be seen by examining Nevada, Arizona, and Idaho. Although these three States ranked in the top 10 in Federal leasing activity (a total of 13,671 leases covering 23.4 million acres, or 20 percent of all leased Federal acreage), the combined reported Federal production for these three States in 1980 was 2.4 thousand barrels per day, or one-thirty sixth of one percent of our total national production. One-thirty seventh of one percent of the total national drilling activity took place in these three States. Thus, while Idaho, Arizona, and Nevada have potential, it can readily be seen that areas exist with substantial Federal leasing activity, but with little production or drilling activity on either the Federal or the non-Federal lands in that area.

The rate of activity on Federal lands may also be influenced by the fact that many of the areas are rugged, remote areas with accessibility problems and often require deeper wells than in other places. For example, the average well depth in Wyoming and Utah in 1980 was 7,318 feet and 5,600 feet, respectively, against a national average of 4,626. Illinois, for example, ranks 7th in wells drilled in 1980, but 14th in footage drilled.

Regardless, it can readily be seen that most national drilling activity takes place in areas with little Federal lands. However, if we examine only those States where Federal leasing is concentrated, we see that the Federal lands receive a significant share of the total drilling:

BEST DOCUMENT AVAILABLE

Total Activity in Selected States in Comparison to Activity on Federal Lands 1980

	State	Total Acreage in State (millions)	Acreage Leased (millions) Total Leased	Federal Acreage	Percent	Wells Drilled Total in State	Federal Wells	Percent
1.	Wyoming	62	39	23	59	1,407	593	42
2.	Utah	53	30	22	73	280	97	35
3.	New Mexico	78	30	10	33	1,966	707	36
4.	Montana	94	38	11	29	882	53	6
5.	Colorado	67	32	8	25	1,253	126	10
	Total		169	74		5,788	1,576	
	Total percent				44			27

Source: General Accounting Office derived from BLM, GS, and American Petroleum Institute data.

It can thus be seen that some Federal lands do receive a significant portion of industry's total drilling effort. Extenuating circumstances make it difficult to reach a conclusive opinion. As will be discussed in chapters 4 and 5, for example, a lot of Federal acreage is held by speculators and of little apparent interest to industry. Drilling could not be expected here. There are also a lot of leases which the leaseholder is trying to assign, but that BLM has not processed. Again, drilling would not be expected on these leases until they have changed hands. Conversely, there is some land held in fee by oil companies which would distort any comparison of leased acreage and well activity, and we were unable to determine the extent to which private leases are fully included in the above totals.

However, in the absence of answers to these questions, one can conclude that while Federal lands do receive significant drilling activity, much of the Federal land lies undrilled, and other factors may impede their development at least to some degree.

WHY IS THERE SO LITTLE APPARENT ACTIVITY ON FEDERAL LANDS?

We contacted selected lessees to see what their plans are regarding each lease and to obtain their rationale for the lack of activity. Our interviews included 54 lessees and covered 118 leases. Among other things, the results showed:

--The industry is quite selective in prioritizing areas for further work. Priorities can change significantly based on the results of the drilling activities of others in the vicinity, which is watched quite closely.

--Industry holds more land than it is capable of developing, to the point of keeping a lease until expiration, even though they are unlikely to drill it themselves. In our opinion, this is apparently done because of the constantly changing priorities of certain lands, and with the idea that what they can't develop themselves may be assigned or farmed out to others.

--Tract consolidation is generally done before industry will drill a "play". This may require considerable time and effort, but does not appear to be a major impediment to lease development.

--No one factor is apparently impeding exploration in a major way, other than the fact that much of the land is seen by industry as having little potential.

BEST DOCUMENT AVAILABLE

For the 118 leases covered by lessee interviews, following are the lessees' intentions for possible future development:

Lessees' plans	Number of leases	Percentage
Positive Plans:		
Drill	12	10
Do geophysical work	3	2
Consolidate surrounding tracts for future development	51	44
No Firm Plans:		
Hold as part of inventory	23	20
Hope to assign or farm out to others	24	20
Relinquish lease or let it expire	5	4
	118	100

Thus, only 10 percent of the leases are covered by definite plans to drill, and over 40 percent are of such low priority that drilling is probably unlikely.

Equally informative are lessees' explanations as to why they are not developing these tracts (some lessees offered one or more reasons; others offered none) as shown by the following:

BEST DOCUMENT AVAILABLE

Reasons for Inactivity

	Number of responses	Percentage
1. The land has little development potential:	53	46
--poor prospect 1/	40	35
--high risk area 2/	8	7
--would sell lease, but can't find a buyer	5	4
2. Uncertain knowledge of tract's potential:	35	30
--still examining geophysical data	14	12
--watching activity nearby	8	7
--lessee is drilling nearby	8	7
--waiting till others in the area do something	5	4
3. Government delays:	13	11
--environmental clearances	4	3
--waiting for nearby leases to be issued	3	3
--drilling permits	3	2
--other delays not specified	3	3
4. Tract consolidation problem:	8	7
--still working on consolidation	5	4
--was unable to consolidate	3	3
5. Other problems:	7	6
--temporarily lacking in-house skills to evaluate tract	5	4
--rig availability	2	2

1/generally based on drilling activity on the lease or in the area

2/generally remote areas with high drilling costs, difficulties in connecting with distribution systems, etc.

Thus, for over 75 percent of the leases, industry sees inadequate geological evidence to warrant drilling at this time. In terms of diligence, one might fault industry for the 11 percent of the leases in which they are "waiting out" their neighbors, but it could also be argued in industry's defense that this is a sound

business approach to the situation, in that it avoids unnecessary multiple drilling in the same general area.

In most cases, industry's ranking an area as a poor prospect and a low priority for development was based on activity in the general area. Following are some of the typical comments we obtained for specific leases:

--Another operator drilled a dry hole 6 miles away; this lease may be drilled in the future.

--Lease does not appear to have much potential. We drilled marginal wells in the immediate area.

--Lease does not appear to have much potential. Seven dry holes were drilled close to this lease.

--Another company drilled a dry hole in August 1981 on a nearby lease.

--Prior lessees had drilled three dry holes.

--Drilled several wells in a unit agreement that included this lease--showed poor potential and the unit agreement was abandoned.

In spite of these comments, we noted that the lessees tend to hold on to most of these leases, generally indicating that nearby exploration activity or other events may take place to result in a higher priority, or that they will be assigned or farmed out to another developer.

It should be noted that few of the reasons given for lack of activity actually block development--they only defer it. The notable exceptions are the relatively minor occurrences of needed but unleased Federal lands in the area, and the inability to consolidate tracts of land for development.

Also, some of the problems often alleged to be major impediments were not cited that frequently by industry lessees we interviewed

--government delays were cited in about 8 percent of the cases;

--tract consolidation problems were mentioned in about 4 percent of the cases;

--too small leases were hardly mentioned at all, probably because tract consolidation is not causing major problems (in fact, several lessees cited lease size as one of the few factors favoring Federal leases; which are generally larger than State or private leases), and

--rig availability, although a constraining factor (see below) is apparently not an impeding problem.

Many leases are not drilled because industry holds many more leases than it intends to drill, including a significant number that industry categorizes as poor prospects. Industry apparently desires flexibility in prioritizing its prospects, and is willing to hold lands for possible assignment to others, if the land should not reach a high enough priority to be drilled by the lessee.

Our work tends to substantiate the views of industry that much of the land is of relatively low potential. About 15 percent of the leases are being held by individuals not associated with the oil and gas industry and, thus, are quite likely of negligible interest to industry. Our interviews with selected lessees indicate that industry itself may hold another 40 percent of the leases whose potential is considered so limited as to make drilling unlikely.

We asked an official at the Denver USGS Conservation Division 1/ Office to evaluate the potential of the sample leases in Utah and Colorado. The official reviewed the lease locations with regard to topographic information, producing field locations, oil and gas pipeline locations, the results of past drilling, and current activity in the area. He rated less than 10 percent of our sample leases as having high potential, about 25 percent as having average potential, and the remaining 65 percent as having low potential.

OTHER INDUSTRY-RELATED FACTORS AFFECTING ACTIVITY

Other factors were examined that we thought might be influencing the rate of development. These were

--drilling rig shortages, and

--lessee abuses of the various lease extension provisions.

Drilling rig shortages

Some reports have indicated that the shortage of drilling rigs impedes exploration. A New Mexico State land office official said that rigs were once plentiful, but no longer are because industry has not increased its supply to fully meet demand. The American Petroleum Institute reported that drilling rig utilization rose to 99 percent during 1980. Under these conditions spot shortages may

---

1/This division was taken out of USGS and renamed the Minerals Management Service effective January 19, 1982. Since most of the actions discussed in this report involve the former USGS, that name is used throughout the report.

occur and some exploration may be delayed due to those spot shortages. However, as discussed earlier, our contacts with industry officials indicated that rig availability was not a problem.

As stated on page 11, drilling rig activity has increased dramatically during the past decade but after reaching a record high in 1981 began declining in 1982.

It can also readily be seen that industry could not be expected to drill every Federal oil and gas lease. As shown on page 10, industry is currently drilling about 6 percent of its wells on Federal lands. They are also reportedly drilling at nearly 100 percent of capacity. At that rate, it would take over 50 years to drill every Federal lease currently outstanding (117,818 leases divided by 2,002 wells completed per year). To drill every lease in 5 years could require that industry allocate nearly 40 percent of its total capability to Federal lands (and, it would likely be imprudent for them to do so in any event):

Industry's approximate current well drilling capability over a 5-year period	310,000
Total Federal leases	117,818
Percentage	38

Possible abuse of lease extension provisions

The lease extension provisions discussed on page 4 can potentially be abused. A lessee can defer drilling until late in the lease term and then receive a 2-year extension, or he can receive an extension by forming and then disbanding a unit agreement. While the potential exists, and we were advised by USGS officials that abuses do occur, our sample taken of 73,626 leases indicated that such abuses are probably a relatively minor problem and any efforts to restrict the forming of units could result in less drilling, not more.

Lease extensions under unit agreements

Only 1.5 percent of the leases in our sample received such extensions, but even then resulted in drilling, and occasionally production. USGS officials said they believe that in many instances, lessees join units and terminate them mainly to obtain lease extensions so they may hold expiring leases an additional 2 years. According to these officials, this is the main abuse of the unit agreements. One official said that many times units are formed over and over with very little drilling.

USGS is responsible for approving units. Information submitted is generally accepted because USGS does not have the knowledge to refute the proposal. One officical said that he could not remember a time when a unit was disapproved. Units are approved even if it

four unit agreements, and by the time it expires will have been extended 7 years over its primary expiration date. This lease has never been drilled. The original lease expiration date was November 30, 1975; however, it joined a unit agreement on July 29, 1975, just 4 months before it was to expire. Ten months before this lease was to expire a second time, another unit was formed. However, it was terminated 10 months later, receiving another 2-year extension.

Conversely, we found in our sample of leases, that fewer extensions were taking place than has been alleged. Of the 73,626 leases covered by our sample, only 1,106, or 1.5 percent, 1/ had obtained extensions from forming and disbanding unit agreements. While units do contain large amounts of acreage, it should also be noted from the following chart that they do result in appreciable amounts of drilling, and some have resulted in production:

1/Sampling error for the number of leases is plus or minus 614 leases at the 95 percent confidence level.

BEST DOCUMENT AVAILABLE

Sample Leases in Unit Agreements that Received Extensions

Lease number	Year(s) extended past original expiration date	Unit(s) formed	Acreage	Wells drilled	Well results
1	7	4	11,630	1	Dry
			29,195	1	Dry
			25,358	1	Dry
			24,101	1	Dry
2	5	2	24,965	1	Dry
			24,950	1	Dry
3	8	3	8,512	2	Dry
			10,504	1	Dry
			12,428	1	Dry
4	8	3	19,199	1	Dry
			19,199	-	-
			24,432	1	Dry
5	to date 18	1	74,717	*	Producing
6	1	1	10,240	drilling	-
7	2	1	24,944	1	Producing
				1	Being drilled
8	6	3	13,274	1	Dry
			24,892	1	Dry
			22,319	1	Dry
9	6	2	15,939	1	Dry
			31,338	1	Dry
10	to date 3	1	24,914	2	Producing
11	to date 7	1	41,810	*	Producing
12	4	1	84,383	3	Dry
			54,842	2	Dry
				1	Producing

* Multiple wells drilled

Source: General Accounting Office derived from BLM data.

Although a unit agreement can result in several leases being tied to one well, it should be noted that a unit agreement should have some geologic basis behind it. If so, it should be a sound concept towards developing a particular area.

The fact that units are formed near the end of the lease term may demonstrate that industry is taking advantage of the extension provision, but it would seem to us, that the main result of any tightening of unit agreement provisions would likely be less drilling, not more.

Lease extensions if drilling is in progress

The 1960 amendment to the Mineral Leasing Act provides for extending leases for 2 years if actual drilling operations were in progress on the date the lease expired. A Geological Survey official told us many lessees delay exploration and drilling until just before the lease expiration date. However, our sample suggests that of the total 73,626 oil and gas leases only 1,309, or 1.78 1/ percent were extended because of drilling. Most leases with current extensions were due to unit or communitization agreements.

DILIGENCE AUTHORITY OF THE SECRETARY OF THE INTERIOR

The holder of a noncompetitive lease has 10 years in which to begin drilling. Generally speaking, this is the only requirement placed on the lessee in terms of developing his lease. (Interior does require lessees to drill their leases when production on adjacent land is draining oil or gas beneath the Federal lease, but this is not directly related to the issue of requiring a lessee to explore for oil and gas.)

Under the Mineral Leasing Act, each lease issued by the Secretary of the Interior "shall contain provisions for the purpose of insuring the exercise of reasonable diligence, skill, and care in the operation of said property." This authority is reflected in the standard lease provision stating a lessee can be required to drill wells the Secretary deems necessary for timely lease development. But to our knowledge, no lease has ever been terminated under this provision and it is very questionable whether the Secretary has data adequate to 'deem necessary' the drilling of any well.

In addition to this standard provision, the Secretary can include specific drilling requirements in a lease. Such a provision would provide a specific basis for termination due to noncompliance. We identified one case where a noncompetitive lease contained a drilling requirement. The lease was cancelled during

---

1/Sampling error for the number of leases is plus or minus 925 leases at the 95 percent confidence level.

the primary term because the lessee failed to comply. We were told this is frequently done on private land leases.

In the absence of such a specific requirement, any attempt by Interior to require a lessee to drill would have to be under the standard lease provision, which is virtually unenforceable. Since there is no sure way of knowing whether commercial deposits of oil or gas exist until the lease is drilled, Interior would probably have a difficult time proving the necessity or even the desirability of drilling. Even if such a provision could be easily enforced, Interior would probably be reluctant to force a lessee to spend several hundred thousand dollars drilling an exploratory well which in all probability, based on the current well success rate, will be dry.

CONCLUSIONS

Industry's reasons for not drilling are many and varied, but in most cases the activity is only delayed or deferred. Increasing drilling activity on Federal lands would require actions to force industry to drill where its judgment tells it is not currently the most promising location. Some of the likely actions proposed to achieve this, such as mandatory drilling requirements, shorter lease terms, or higher rentals would not likely change industry's drilling plans, but would more likely result in industry merely holding less leases. With the average oil well costing over $270,000 to drill, and three of four wildcat wells being dry, industry would not likely be easily persuaded to drill against its better judgment, and it is questionable whether the Government would wish to have a role of influencing or forcing them to do so.

Some conjecture that if nothing else, a faster lease relinquishment caused by diligence requirements would help because it would make the lease available to someone who may be more likely to develop it. However, we believe this should also be approached with caution because of

--difficulties BLM has been having in re-issuing expired leases,

--the apparent willingness of industry to make assignments and farm-outs among themselves, and

--actions that may require any significant increase in drilling activity on Federal lands would likely be met at the expense of activity on non-Federal lands, thus not significantly altering the situation from a national standpoint. The recent decline in drilling rig utilization tends to substantiate that industry will drill when and where it deems appropriate, and would not easily be influenced to drill.

However, it does appear that some potential exists for increased activity on Federal lands. If increased activity is desired by the Federal Government, corrective action would probably best be directed to those problems which are preventing industry from drilling where they want to (see ch. 5), rather than considering actions that would force or prod them into drilling where they do not want to.

CHAPTER 4

THE INDIVIDUAL SPECULATOR IN OIL AND GAS EXPLORATION - AN IMPEDIMENT OR STIMULANT?

Many industry and Federal sources cite the individual speculator as an impediment to exploration. However, our sample of lessees interviewed demonstrated a substantial shift in lease ownership from individual speculators to oil and gas companies within a relatively short period of time, thus indicating that speculators may not be a major impediment. In fact, some lessees felt that individual speculators stimulated exploration and development by keeping the land leased and available for industry. It does appear that while the speculator does cause some delay in drilling a particular area and adds to the cost of development, through lease assignment prices and overriding royalties, these are not major impediments to development. In addition, speculators actually provide millions of dollars annually to the Federal and State treasuries.

WHO ARE THE INDIVIDUAL SPECULATORS?

"Individual speculator" is a nondescript general term commonly applied to Federal noncompetitive lease applicants who do not contribute to exploration and development. Not all individuals meet this definition, and some are rather hard to categorize. Some individuals may be connected to the oil and gas industry, such as an oil and gas employee or relative, and some are brokers or landmen who deal extensively in the business. These individuals can make a positive contribution by finding and obtaining unleased land, perhaps doing some geophysical work and convincing industry that the area warrants exploration. It may be, however, that some in this category are little more than full-time professional speculators. The type of person generally considered an individual speculator is the non-industry associated individual who has neither the capability nor the interest in exploring and drilling for oil and gas. For some monetary consideration, these lessees are speculating that their mineral rights will be of value to someone else. The value received is usually some share of commercial quantities of oil or gas produced, and the payment of money in return for lease assignment.

FEDERAL LEASING SYSTEM ENCOURAGES PRIVATE CITIZEN SPECULATION

Federal lease provisions appear to encourage the private individual to speculate in the oil and gas leasing system, since, at least until recent filing fee and rental changes, nearly everyone could hold a lease without much capital outlay. Some officials from both industry and Government endorse the right of all citizens to apply for oil and gas leases on the grounds that the wealth of

the public lands should be equally available to the public. Following are the requirements for acquiring and holding a lease.

--Holding Qualifications. Federal oil and gas leases may be held by any adult United States citizen, or association of such citizens, a domestic corporation or municipality. Even minors, through a guardian or trustee, may hold leases. Hence, no connection or association to the oil and gas industry is required of any lessee. Financial responsibility or drilling capability is also not a prerequisite to holding a Federal lease.

--Holding Costs. The costs to apply for and hold a Federal noncompetitive lease is low enough that speculation is practical. The simultaneous oil and gas leasing system required only a $10 filing fee prior to October 1, 1981. Although it was raised to $25, the increased fee was not expected to have a significant impact on the participation of private individuals in the leasing system. Effective February 19, 1982, the Department of the Interior increased the filing fee to $75 and annual rental for simultaneous leases from $1 per acre to $3 per acre after 5 years which is expected to reduce these speculators.

The previous filing fee and holding costs (rental fees) for noncompetitive leases compared to the potential value of the leased lands made speculation potentially lucrative. For example, a gas company recently stated that it would have bid as high as $500 per acre for certain sections of noncompetitively leased land originally obtained for a $10 filing fee and an annual rental payment of $1 per acre. The Department of the Interior says it has information showing one lessee for a Federal noncompetitive lease obtained for only $2,157 (first year's rental) plus a $10 filing fee was valued at $200,000 plus future royalties. A Geological Survey official stated that eight winners from the July 1981 Oklahoma lottery became instant millionaires. Many of the leases, however, are never sold to industry, most of those sold are probably for a much lower price, and probably most speculators never see any production royalties.

Individual speculators appeared to be awarded majority of simultaneous leases

Individual speculators, those private citizens who do not have any association with the oil and gas industry, appeared to be awarded approximately 57 percent of the simultaneous, or lottery leases in our sample, as shown in the following chart:

BEST DOCUMENT AVAILABLE

Individual Speculator
Involvement as Original Lessee

Sample States	Number of lessees	Total simultaneous leases	Percent
Utah	3,065	5,926	51.72
New Mexico	5,354	6,961	76.91
Colorado	2,095	3,666	57.15
Wyoming	14,753	27,660	53.33
Total	25,267	44,213	57.15

The above figures are approximations because we were unable to determine conclusively whether an individual was a speculator or was associated with the oil and gas industry. Landmen, brokers, and geologists are examples of individuals associated with industry and who were not classified as individual speculators.

Determining the possible association of an individual with an oil and gas company was difficult. Many individuals could be an officer or employee of a company, or a family member of someone with an interest in a company. Names of apparent individual speculators were cross-checked against the 1981 "Rocky Mountain Petroleum Directory" 1/ and some lessees' addresses could be matched with company addresses. Furthermore, some individuals were interviewed by telephone to determine involvement in the industry.

An official of the Rocky Mountain Oil and Gas Association stated that speculators acquire between 67 to 75 percent of all simultaneous leases. However, our sample analysis revealed only 57 percent are true speculators, which may indicate that many seemingly individual speculators are actually associated in some way to the oil and gas industry and hence are not individual speculators according to our definition. This smaller involvement that we found might indicate that individual speculators are not as involved with the simultaneous system as commonly believed.

Industry acquires leases from speculators fairly quickly

The oil and gas industry appeared to acquire leaseholder rights to simultaneous leases through assignments fairly quickly. Lease assignments resulted in a significant shift in leaseholder ownership from individual speculators to the oil and gas industry, either to companies, or to oil and gas associated individuals. The chart below illustrates the number of leases in our sample still

---

1/The 1981 Rocky Mountain Petroleum Directory lists those companies, individuals, Government agencies, and associations involved, to some extent with the oil and gas industry in that area.

BEST DOCUMENT AVAILABLE

held by individual speculators at the time of our review, for which industry had not had access. (That is, the figures do not include some leases that were originally held by a speculator, assigned to an oil or gas company, but later reassigned back to the speculator. Nor do the figures include leases that are or were part of a unit agreement, or leases that were partially assigned to an oil or gas company. For our purposes, we felt that such leases are or were in the hands of industry should it choose to develop them):

Individual Speculator Involvement at the Time of Our Review in Simultaneous Leases

Sample States	Simultaneous leases	Speculator was original lessee	Speculator is still lessee
Utah	5,926	3,065	1,635
New Mexico	6,961	5,354	1,606
Colorado	3,666	2,095	349
Wyoming	27,660	14,753	2,859
Total	44,213	25,267	6,449
Percent	100	57.15	14.59

Note: See appendix II for details on sampling error.

Thus, at the time of our review, individual speculator holdings declined from 57 percent of the simultaneous leases to 14.6 percent.

A majority of assignments occurred during the early years of the lease. For example, approximately 73 percent of all initial lease assignments were made within 2 years of the lease issuance date, and 91 percent were made within 5 years. This rapid shift in leaseholder interest indicates that industry is able to acquire speculator holdings quite readily. Thus, individual speculator involvement in the simultaneous leasing system may not be as great an impediment to lease exploration and development by keeping leases away from industry as commonly believed.

THE INDIVIDUAL SPECULATOR - A NEGATIVE OR POSITIVE EFFECT?

Following is a discussion of the relative merits of speculator involvement in the leasing system.

Speculators as an impediment to exploration

It is widely stated that the speculator adversely affects development:

--A 1979 Interior task force review of onshore oil and gas leasing policy also concluded that having leases pass

through non-producers (or private citizens) rather than going directly to the companies best able to develop them may inhibit efficient development of onshore oil and gas lands.

--A 1978 BLM publication stated that winners in the lottery system almost never engage in exploration or development activities.

--A 1975 Federal Trade Commission report concluded that adverse efficiency effects occur from non-companies which win leases under the simultaneous filing system.

--A 1968 study on energy fuel minerals concluded that most entrants and winners in the noncompetitive lottery are speculators and that exploration was stymied by some nuisance holders of lottery leases who refused to sell.

Several leaseholders in the industry we interviewed also believe that individual speculators have a negative effect on their ability to explore oil and gas leases. A problem mentioned by all is the high cost asked for leases and that industry must go through a middleman instead of getting leases directly from the Federal Government. Dealing with a number of people to put together a block extends the time for exploration and development.

Speculators may have a positive effect on exploration

According to some, the individual speculator may also have a positive effect by obtaining leases and making them available for developers through assignment.

For example, a New Mexico State oil and gas official stated that oil can only be discovered if the land is leased, regardless of who has the lease. Hence, it is better to have the land leased so that exploration and development can occur. Since most of the land leased under the simultaneous filing system has unknown and perhaps limited or little potential, the land may not be leasable under a competitive system. Allowing private individuals the opportunity to acquire leases makes the land available for assignment and exploration. Industry officials can, in most cases, negotiate with speculators and obtain lease assignments to assemble blocks of land to explore. Therefore, this official does not view individual speculators as impediments, but rather a positive force on exploration.

The speculator - a mixed impact

The actual impact of the speculator can not be definitively determined, perhaps, because the impact is mixed. In some respects, the speculator may impede industry, but in other respects has a positive impact. In our sample, while speculators appeared to acquire the majority of noncompetitive leases, ownership was usually assigned to oil and gas companies rather quickly. Seven of 54 lessees

interviewed thought speculators were not a problem, while 12 thought they were; the rest offered no opinion.

However, the current leasing system, even with speculator involvement, is working and industry is apparently coping with the negative aspects of speculation. Furthermore, any change to the leasing system for the purpose of eliminating the speculator could have undesirable effects. For example, an increase in the filing fee (such as Interior's increase from $25 to $75) will probably eliminate many speculators, but may also work as a hardship on many independent oil companies which, in fact, do most of the drilling on Federal lands. Hence, to eliminate the speculator through an increased filing fee could result in a decrease in exploration and development. Its effect on Federal receipts is also uncertain. These factors are discussed below.

Interior, it its June 10, 1982, comments on this report disagrees that the increased fee will work a hardship on independents but indicated it will continue to evaluate the impact (see p. 49).

CHANGES TO ELIMINATE SPECULATORS

Legal and regulatory changes have been proposed in the past and by the current administration, to reduce speculators and encourage prompt industry exploration and development activity. Two of the more significant changes of the administration, directed at reducing speculator involvement, are:

--increasing the filing fee, and

--increasing the lease rental fee.

These changes may cause positive and negative impacts.

The Secretary of the Interior recently conducted a study of the noncompetitive portion of the Federal onshore oil and gas leasing program. We did a review of the increased filing fee on which a separate report has been issued. 1/ Interior's study was motivated by the concerns of the Secretary to (1) ensure the integrity of the noncompetitive leasing program, (2) motivate diligence, and (3) ensure receipt of adequate revenues for the public's resources. The changes to the noncompetitive leasing system include increasing the lease application (filing) fee, and increasing the lease rental fee. The Department decided not to require advance rental fees.

1/"Effects of Increasing Filing Fees for Noncompetitive Onshore Oil and Gas Leases," EMD-82-67, Mar. 19, 1982.

The $75 filing fee was effective with the March 1982 lease sales. The $3 rental fee is effective for those simultaneous leases issued after February 19, 1982, and begins with the sixth year of the lease. Our industry contacts were nearly completed when these changes were announced, so we did not include them in our analyses.

The changes to the leasing system are discussed below.

Increase the application (filing) fees

The nonrefundable filing fee which accompanies each lease application was increased above the recently established $25 fee to $75. The higher fee is expected to reduce casual speculation in oil and gas leases and ensure a greater direct participation by those involved in the business of exploring for and producing oil. The increased filing fee is also expected to reduce the administrative burden involved in operating the simultaneous filing system. Finally, Interior expects substantially more Government revenue.

While some of the above expectations can probably be achieved, the projected increase in Federal revenue may not be realized. The Department of the Interior concluded that filing fee revenue will rise to between $150 and $225 million (based upon 2 to 3 million applications) compared to only $36.3 million (3.6 million applications) in fiscal year 1979. We believe the impact of the increased filing fee is actually quite uncertain.

The sharp increase in filing fees to $75 could eliminate most individual speculators but could also reduce participation by many independents and oil and gas industry-related individuals such as landmen and brokers. Our sample analysis showed that only 57 percent of the lessees are speculators. Assuming that win percentages are indicative of participation percentages, approximately 57 percent of all lottery participants are individual speculators, 41.7 percent are independents, landmen, and the like, and 1.3 percent are majors. Elimination of all individual speculators then would reduce the number of lottery applications by approximately 57 percent. Furthermore, independents and industry-related individuals who constitute 41.7 percent of all winners in GAO's sample, may not continue their same number of applications due to limited capital. For example, one independent advised us when the $10 filing fee was in effect that his firm filed on about 150 lottery leases a month--an expenditure of $18,000 a year. To maintain that rate of participation at $75, the applications would cost $135,000. If they continued to participate at the same dollar amount, rather than the same rate of filing, the number of applications could drop substantially. The major oil companies, with greater cash reserves, would be more likely to increase their number and dollar volume participation in the lottery. Hence, with speculators eliminated and the participation of industry-related individuals reduced, total annual applications may fall below the Department's projections of 2 to 3 million applications with a corresponding short-fall in the projected revenue.

The exact effect of a major increase in the filing fee will be uncertain until it is tried. The acreage under lease will probably not decline significantly, since it only takes one applicant to get a lease. The effect on revenues is much less certain. If successful in eliminating the individual speculator, the applications would apparently be reduced by about 57 percent, but this loss in Federal receipts would be more than offset by the extent of the filing fee increase, if industry continues to file as frequently as before. Another major uncertainty is the reaction of the oil industry. It would have to increase its financial participation 7-1/2 times to double its chances of winning. It thus appears that there is a good chance the $75 filing fee will not be cost-effective from the oil companies' point of view, unless all industry only continues to participate at the same financial level as before, in which case Federal receipts will probably decline.

Finally, less exploration may occur because independents, who do most of the exploratory drilling, may through decreased participation, control fewer leases, which in turn may lead to increased participation by majors, and may have less money to spend for exploration because they are paying higher filing fees. The jump from $10 to $75 (650 percent increase) in the filing fee in such a short time is hence likely to have a significant impact, even perhaps on some major oil companies.

Companies interested in exploring for oil and gas can presently obtain needed leases because individual speculators are very interested in selling their leases. If speculators were eliminated from the leasing system, oil companies would directly receive more leases in which they have an interest. Companies presently deal rather sucessfully with speculators, but might have to pay more for leases when dealing with each other. Therefore, the public might pay more. Their rationale is that companies have a better idea what leases are worth than individual speculators, who in most cases have very little knowledge.

Individual speculators obtain most of the lottery leases awarded and are eager to sell them. Industry now has access to most leases it needs because they are in the hands of speculators. With speculation being somewhat eliminated, industry would not have access to as many leases because more would be held by BLM, particularly with the present backlog of expired but unissued leases. Maybe it would be better for speculators to hold leases than BLM.

We suggest Interior closely watch the impact of the $75 filing fee on both Federal receipts and on the independent. This was also suggested in our March 1982 filing fee report mentioned previously.

Increasing the lease rental fee

The rental fee was increased from $1 per acre per year for the entire 10-year lease term, to $1 per acre per year for the first 5 years, and $3 per acre per year thereafter. The increased rental applies only to lottery and not over-the-counter leases.

Higher rents are believed to encourage diligence by stimulating the lessee to move faster in assembling the "play" and in commencing drilling. This could, however, transfer to the Government monies which might have been used for exploration thus resulting in a negative impact on the timely and orderly development of the oil and gas resource.

Thirty-three of 46 leaseholders we interviewed, said that they would participate less in the leasing program and some thought an increase in rentals would be particularly hard on independent oil companies. Some Interior officials and a few leaseholders also thought that increased rentals would help remove speculators from the leasing program, and one Federal official also thought the increased cost would result in less tracts being leased. Federal leaseholders and industry representatives generally oppose increasing rental fees on Federal leases. Both said that this increase in the cost of holding a lease would result in less money for exploration thus decreasing exploration.

PROPOSED INCREASE TO
BASIC ROYALTY RATE

Another change to the system now being actively considered is an increase in the royalty rate.

In January 1982, the Commission on Fiscal Accountability of the Nation's Energy Resources recommended numerous changes to the Government's royalty management system. One of the recommendations was "that the Secretary take the necessary steps to implement the use of a minimum royalty rate of 16-2/3 percent for new and renegotiated oil and gas leases***." This is an increase of 4 percent over the basic 12-1/2 percent rate that is currently in effect for most leases. The Secretary of the Interior has directed that an economic analysis be undertaken on the royalty recommendation before any changes are made to the current leasing program.

We agree that an economic analysis is appropriate, particularly coming so soon after the increase in the rent and filing fee. As indicated previously, the impact of the rent and filing fee increases on the oil industry is uncertain at best, and we believe should be approached with caution since it is a "front end" cost incurred prior to the generation of any revenue by the lessee. A royalty takes place after the lessee is generating revenue, and is certainly a more direct measure of the resources value and thus probably a better measure of fair market value.

However, it should also be remembered in this regard that many onshore oil wells are marginal operations, the average daily production in 1980 being slightly over 20 barrels per well per day, versus an average offshore production rate of over 200 barrels per well per day.

We are currently analyzing the possible budgetary impact of the higher royalty in a report expected to be issued this fall.

PROLIFERATION OF SMALL TRACTS

Another allegation made against the individual speculator is that he obtains leases and subdivides them into smaller leases for resale. This adds extra work for BLM officials who must process them; but probably more importantly, requires extra time and effort on industry's part to re-assemble these leases into a tract large enough for exploration.

The Mineral Leasing Act prohibits splitting leases into tracts smaller than 40 acres, and legislation has been submitted in the past to change this to 640 acres. Leases also have a maximum size--640 acres for a competitive lease, and 10,240 for a noncompetitive lease. (Noncompetitive leases were limited to 2,560 acres until 1980.)

The average lease size on Federal lands is 932 acres, and many are much smaller, but other studies state that no serious developer will generally undertake exploration on less than 2,500 acres, and the desired size may be much larger. Hence, oil and gas companies will attempt to obtain control of more acreage in a potential "play" area before exploration. The reasons for this are financial. Exploration and subsequent drilling may indicate good potential of land tracts with previously unknown potential, thereby increasing the value of land in the surrounding area. Much of the increase in land value will be lost to the company conducting the exploration unless control is obtained prior to exploration. Mineral rights to surrounding areas could possibly still be obtained after successful exploration, but acquisition costs would likely be higher.

CONCLUSIONS

The impact of the individual speculator, while widely alleged to be negative, is not that clear cut. On the negative side, the speculator

--acquires a lot of the leases initially, particularly in the lottery, which could delay exploration somewhat;

--generally receives a cash bonus and overriding royalty for assigning the leases to industry, which adds to the cost of development; and

--sometimes splits leases into smaller tracts, further delaying development because of additional time and effort required by lessees who wish to consolidate lease tracts for development.

On the positive side, however, the speculator

--is usually apparently quite willing to assign his leases to industry;

--may actually be a cheaper source of leases to industry than would other options;

--may enhance the availability of land to industry by keeping it leased and available (particularly important with the present backlog in offering and processing new leases);

--contributes substantial sums of money to the Federal and State treasuries; and

--is in accordance with the concept that the wealth of our public lands should be equally available to all citizens.

The impact of any attempt to eliminate or reduce speculator involvement will be uncertain until actually attempted. However, we identified no compelling reasons that clearly call for eliminating his involvement; possibly the reverse.

In its June 10, 1982, comments on this report, Interior stated that we did not give adequate attention to assignment bonuses and overriding royalties received by speculators when leases are assigned or whether these factors represent a market value which should go to the Government. Also, that we dismissed the entire matter with the conclusion in the preceding paragraph. These factors were not identified as major impediments warranting more coverage and market value was not covered in the job scope (see p. 49).

We believe that the most promising means of enhancing oil and gas exploration on Federal lands is through eliminating disincentives or impediments to industry. Some of these are discussed in the following chapter.

CHAPTER 5

POSSIBLE FEDERAL IMPEDIMENTS TO INDUSTRY EXPLORATION

As indicated previously, the Government can also take certain actions to contribute to development of our Federal onshore oil and gas resources. Most of these have been reported on previously by GAO, and Interior is actively working on them as well. They are to reduce

--delays in processing lease assignments and new lease offerings;

--delays in processing permits to drill, caused by processing archaeological and environmental clearances; and

--restricted access to some lands.

As stated, prior GAO work has confirmed the validity of most of these complaints. It should be noted, however, that the Federal practices, as with certain industry practices, do not generally prevent development--they only delay or defer it. The notable exceptions are withdrawals and other access restrictions which are in areas where oil and gas development is seen as jeopardizing other desired land uses. Delays in processing assignments and lease issuances may also hinder development. An assignment delay might prevent the lease from getting into the hands of industry in time for planned activity, and unleased land, of course, cannot be developed.

LEASE ASSIGNMENT AND LEASE ISSUANCE BACKLOG

The backlog in lease assignments and issuance has arisen as a potentially serious problem fairly recently, mainly caused by the 1980 moratorium on leasing and the resultant fraud investigation. However, since our previous report in 1981 the backlog had gotten worse rather than better, due to personnel shortages, turnovers at Interior, and other causes. The significance of the problem can be seen nationally from the following table which presents data as of January 1, 1981:

Total issued Federal leases	117,818
Leases awaiting issuance (applications received)	28,919
Posting of leases (expired, terminated, and relinquished leases)	11,607
Assignments pending approval	15,508

Thus, as of the above date, about 20 percent of the Federal leases were unissued, and leaseholders for about another 11 percent were attempting to transfer ownership, but were unable to readily do so. Since then, however, BLM has made a concerted effort to reduce the backlog.

According to BLM, as of January 1982 43,000 leases were awaiting issuance of which about 14,000 were received within the past 6 months. Applications less than 6 months old are not considered by BLM to be in backlog. Also, BLM has stated that a significant amount of the lease backlog is due to another bureau or Department. As stated above, Interior has been actively working on the backlog and has established a goal of eliminating it by the end of 1982. According to data provided by BLM, as of June 1, 1982, the backlog was 31,787 leases of which 10,444 were less than 6 months old, 4,085 were considered BLM backlog, and 17,258 were considered non-BLM backlog.

DELAYS IN OBTAINING PERMITS TO DRILL

Several leaseholders we interviewed advised us that delays were occurring at the Geological Survey where considerable time is being taken to approve applications for permits to drill. A previous GAO report 1/ disclosed that significant delays are occurring in the approval of drilling permits which have to be submitted by the lessee and approved by USGS before drilling can begin. Although USGS has a goal of issuing a drilling permit within 30 days of receipt of application, a June 1981 study 2/ found that the mean time in the Geological Survey offices examined was actually 67 days.

Apparently two of the key factors slowing issuance of drilling permits are the environmental and archaeological examinations that are made as part of the review process. Since State lands are not subject to the legislation requiring these reviews (the National Environmental Policy Act and the National Historic Preservation Act), State offices can regularly issue drilling permits on State leases in 1 to 7 days.

In an effort to ensure timely permit issuance, the USGS has recently rewritten regulations to speed-up drilling permit processing. Changes include requiring USGS supervisors to take action on drilling permits within 30 days, cut back on requirements for sundry notices, and establish a new review process which permits companies to informally appeal denials of drilling permits. These regulations are currently undergoing approval review procedures.

Again, however, it would appear that while the processing of drilling permits could be a delaying factor and an irritant to industry, delays in issuing the permits should not prevent drilling if industry recognizes the problems involved and plans accordingly.

1/"Actions Needed to Increase Federal Onshore Oil and Gas Exploration and Development," EMD-81-40, Feb. 11, 1981.

2/"Analysis of Delays in the Processing of Applications for Permits to Drill and Pre-staking Clearance Applications," Everett and Associates, June 1981.

BEST DOCUMENT AVAILABLE

RESTRICTED ACCESS TO FEDERAL LANDS

Federal lands closed to oil and gas exploration and development can also be an impediment to industry. The vast majority of Federal lands withdrawn are in the 11 western States and Alaska. Prior GAO reports 1/ stated that of about 410 million Federal acres in the lower 48 States, approximately 64 million have been closed to oil and gas development and another 76 million are not really available for leasing due to being designated wilderness or wilderness study areas.

In three of our four sample States covered in a prior review 2/, we found that 8.4 million acres had been withdrawn from oil and gas leasing. Of these, 4.4 million, or 52 percent, are considered by USGS to be prospectively valuable for oil and gas. Most of these withdrawals had no termination dates.

Federal Land Closed to Oil and Gas Leasing
(millions of acres)

State	Formally withdrawn lands (note a)	Administratively withdrawn lands (note b)	Total withdrawn lands	Withdrawn lands with oil and gas potential
Colorado	.7	.4	1.1	.4
New Mexico	3.8	.1	3.9	3.0
Wyoming	2.6	.8	3.4	1.0
Total	7.1	1.3	8.4	4.4

a/ Act of Congress, Executive Order, regulations, etc.
b/ Agency administrative action

The administration has attempted to open up lands in the lower 48 States for leasing--specifically acquired military lands and designated wilderness areas. Overall, however, little progress has been made in actually opening substantial acreage for leasing--particularly in the lower 48 States--because of the following major problems

--incomplete withdrawal reviews,

--incomplete wilderness study area reviews,

1/ "Actions Needed to Increase Federal Onshore Oil and Gas Exploration and Development," EMD-81-40, Feb. 11, 1981 and "Accelerated Onshore Oil and Gas Leasing May Not Occur As Quickly As Anticipated," EMD-82-34, Feb. 8, 1982.

2/ Ibid.

--inherited backlogs of revocation requests,

--litigation concerning leases on acquired military lands, and

--public opposition to oil and gas leasing in designated wilderness areas.

This administration's initiatives may speed up the process of opening lands to leasing in the future. However, as discussed earlier, these efforts may be impeded by the backlog of oil and gas leases that already exist.

LESSEE VIEWS ON CHANGES NEEDED TO IMPROVE EXPLORATION AND DEVELOPMENT

During our interviews with lessees to determine their reasons for inaction on selected leases, we also asked their views on what could best be done to enhance development of oil and gas on Federal lands. Although the responses obtained varied considerably, those mentioned most frequently were, quite naturally, directed at perceived deficiencies in Government operations rather than the industry itself. As indicated earlier, however, it is interesting to note that the speculator seldom surfaced as a problem, nor did existing lease provisions.

Their responses indicated a need to improve the handling of paperwork, particularly to reduce delays in the issuance of leases, approval of permits to drill, processing of assignments, NTL-6 requirements 1/, and changing the windfall profits tax. Although industry could certainly not be expected to be totally unbiased in its perception of the situation, it should be noted that many of their observations have merit, having been previously substantiated by GAO reports. Following is a tabulation of the most frequent responses we received from lessees contacted.

1/Notice to Lessees Number 6, Approval of Operations--identifies conditions and standards under which lessees are required to operate during exploration, development, and abandonment phases of a lease.

BEST DOCUMENT AVAILABLE

Lessee Stated Actions Needed to Improve Lease Development

Problem	Number of times cited
Eliminate BLM/USGS delays	35
Change the windfall profits tax (note a)	11
Reduce burdensome Government regulations	8
Total	54

a/by allowing companies to recover cost before paying the tax, reduce the rate, etc.

CONCLUSIONS

Conditions such as Government delays in processing lease-related paperwork, land-use restrictions, and possibly the windfall profits tax, could be modified in an attempt to accelerate oil and gas development on Federal lands. Although many of these conditions have been reported on by GAO in the past, and the administration is attempting to alleviate them, they still exist.

If industry cannot obtain needed leases to put together a block of land, they will not drill. Delays in processing permits to drill could be sped up, although this should not be a major problem because industry should be able to plan around this situation. The administration is presently taking action to try and open up previously restricted lands that have potential for oil and gas. Industry indicated the windfall profits tax is a major concern in that it takes capital that could otherwise go for exploration.

CHAPTER 6

CONCLUSIONS, AGENCY COMMENTS, AND OUR EVALUATION

CONCLUSIONS

Concerns are frequently expressed about various factors impeding development of Federal onshore oil and gas leases. Most commonly cited are the lack of diligent efforts on the part of industry, and delays caused by speculators who contribute nothing to development.

We found that these concerns stem to some extent from a lack of data and understanding of how industry and the leasing system works. No one factor seems to be having a major impact on development, and most only delay, rather than prevent it. These concerns should be viewed in light of the following

- --industry is devoting considerable effort to non-Federal and some Federal lands in areas of significant oil production, but much Federal leasing takes place in areas where the oil industry has not yet developed;
- --most actions that might be taken to spur industry activity would reduce industry's flexibility and would not likely enhance oil and gas development from a national perspective.
- --the speculator has a mixed impact on development but does not appear to be materially delaying it even though some feel the speculator impedes efficient development; and
- --the speculator's positive contributions include providing substantial Federal receipts and giving the general public an opportunity to share in a publicly owned resource.

There are certain matters within its own operation that the Department of the Interior could attempt to rectify that might speed up exploration; GAO has reported on most of these and Interior is working on them. The most certain way for Interior to enhance production on Federal lands would be to eliminate unnecessary delays to leasing related actions. These matters include

- --the backlog of assignments and lease offerings that has recently developed; and
- --delays in processing drilling permits and other clearances.

The effect on either production or revenues from attempts to eliminate the speculator is so uncertain that we believe they should continue to be approached with caution. We again suggest, as stated previously in our March 1982 filing fee report, the Department of the Interior closely watch the impact of its

increased filing fee, as well as the increased rental, on independent oil company participation and Federal receipts.

AGENCY COMMENTS AND OUR EVALUATION

We obtained comments on our draft report from the Department of the Interior, which are included in appendix III. The Department is in general agreement with the report conclusions and suggestion to monitor the impact of the increased filing fee and rental. We considered other general and specific Interior comments and made changes in this final report where deemed appropriate. Their more substantive comments are further addressed below.

Interior does not agree with the conclusion that increased Federal drilling would likely be done at the expense of activity on non-Federal lands, and further believes that this conclusion is inconsistent with (1) the body of our report in which we state that rig availability is generally not a constraining factor, and (2) an Office of Technology Assessment (OTA) study which indicates that drilling rig construction can meet future industry demand. We believe our conclusion is valid and consistent with the remainder of the report and the cited study. The body of the report states that, according to industry officials, rig availability is not a problem. This is also substantiated by the study referred to as being done by OTA (actually done by the 1979 National Petroleum Council). These statements on rig availability apply to the existing or projected demand for rigs, i.e., a lessee's ability to drill a lease once having elected to do so. However, in the digest, we are referring to the impact of a required increase in Federal drilling, in which each Federal lease is required to be drilled. When considering that the Federal share of the total national onshore drilling effort for the past decade has consistently been about 6 percent or nearly 3,300 wells per year in 1980, a demand for rigs caused by required drilling on over 100,000 leases would very likely be at the expense of non-Federal lands or, as our report states, result in leases being dropped. If all Federal leases contained a drilling requirement, construction of new rigs might somewhat alleviate the extent to which drilling would have to be curtailed on non-Federal lands, but again we are inclined to doubt that industry will arbitrarily increase its rig investment or drilling activity against its better judgment.

Another comment was made by Interior on the National Petroleum Council study. Interior stated that this study indicates drilling rig construction can meet any amount of industry demand for rigs. Our review of this study disclosed that the drilling equipment industry, according to the Council, has the capability to meet drilling activity at projected levels and not "any amount of industry demand" as Interior stated. The projected levels are well below the number of wells that would be required if each Federal lease had to be drilled.

Interior said that the statement "difficulties are likely to be encountered in getting leases re-issued because of the backlog recently developed at BLM" implies that BLM deliberately allowed a backlog to develop. We intended no such implication. As Interior pointed out, the backlog developed for several reasons, and it is making a concerted effort to reduce and eventually eliminate this backlog. On page 42 and 43, we recognize the extent to which BLM has indicated the backlog has been reduced.

Interior agreed that fewer unit agreements are being formed to obtain lease extensions than has been alleged but said that there are enough instances of unearned lease extensions to justify statutory changes. We acknowledge this possibility in our report, and would encourage any Interior efforts to close loopholes they identify. Our only contention is that unit agreements often do result in drilling, and occasionally in production.

Interior stated that the report does not give adequate attention to assignment bonuses and overriding royalties that speculators receive for transferring leases, and whether these represent a market value to which the Government is more properly entitled. Further, Interior stated that these factors were simply dismissed by our concluding that no compelling reason exists for eliminating the speculator. Our study objective was to determine if lessees are making a diligent effort to explore and develop Federal leases and, if not, to determine the cause and possible solutions. In this context, the matter of market value--and how best to ensure receiving it--was not addressed in detail.

The Department of the Interior does not agree that the increased filing fee will cause a hardship for independent producers and stated that no evidence exists as to the possible adverse impact on lease development. Because only a few months have passed since the fee was increased to $75, it is too soon to tell precisely what impact the fee increase may have on independents. We stated that it may work a hardship but, because of the uncertainty involved, also suggested that Interior closely watch the impact of this change on independents. Interior indicated that it will continue to evaluate the overall impact of the fee.

A further comment by Interior on the effect of the filing fee increase indicates that the Federal Government does gain revenues. We do not state that revenues would not be gained but rather that projected revenue increases may not be realized. On page 38 of this report, we state that even if the increased fee substantially reduces the number of speculators this loss in Federal receipts would be more than offset by the extent of the filing fee increase. A similar position was taken in our previous report mentioned on page 36 concerning the effects of the increased filing fee. In that report, we stated the fee increase very likely would result in more revenue.

Finally, Interior believes the conclusion that little drilling activity occurred on Federal land leased between 1964 and 1979 may not be valid because the lease population did not include relinquished or expired leases. As a result, Interior believes the report indicates an unlikely conclusion that 80 percent of drilled leases are producing. We do not agree that our sample lease population invalidates our conclusions. Their contention that a successfully drilled lease is more likely to be in our sample than unsuccessful ones has merit, since the latter are more likely to be terminated. However, our objective was to identify the extent of development activity, including drilling, by the current lessee on active Federal leases. Therefore, the drilling data presented pertains to the drilling activity of the current lessee and not the total drilling that may have been done on this Federal land under previous leases. Interior's comment is also presented on page 8 of this report.

We could have compiled this data (although with difficulty, because the lease configurations change over the years), but we believe the results of prior drilling are probably shown by the significant percentage of leases which industry ranks as very low priority prospects. Thus, while our data does not reflect the extent of drilling that has taken place on Federal lands historically, we do believe it is a more accurate reflection of what is taking place on Federal lands today, and why.

In spite of this, however, our sample data does not differ greatly from nationwide drilling statistics. The high success rate is apparently primarily attributable to developmental wells, versus exploration wells. Although it is possible that the percentage of leases with successful drilling may be somewhat elevated for the reason suggested by Interior, nationwide data does not differ that much from our sample. The success rate for wells drilled in the United States during the same period as our sample leases showed a success rate as high as 79 percent for development wells and about 10 percent less for the total wells drilled. Thus, while it is true that the likelihood of a successful exploration well is quite low, developmental wells are drilled at a rate of 2.5 to 3 times more frequently and the success rate on these is quite high, which corresponds closely to the data in our sample.

We agree that it would have been more desirable to show the extent of exploration (versus total) activity on Federal lands but unfortunately such data is not available.

BEST DOCUMENT AVAILABLE

MEASURES OF EXPLORATION ACTIVITY

USED WITHIN THE OIL AND GAS

INDUSTRY

Seismic Crew Months Worked Onshore
1971-1980

	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980
Colorado	32	72	69	76	37	53	42	61	58	87
New Mexico	86	98	94	133	74	79	53	89	85	120
Utah	71	64	51	89	65	65	71	163	106	158
Wyoming	126	126	264	363	353	239	183	211	366	274
Total	315	360	478	661	529	436	349	524	615	639
Total U.S.	2,755	3,140	2,999	3,660	3,302	2,996	2,426	3,845	4,037	4,444

Average Onshore Rotary Rig Activity

	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980
Colorado	30	35	42	45	42	38	45	41	40	61
New Mexico	47	55	62	79	71	54	70	76	88	118
Utah	17	34	38	42	26	19	30	32	29	42
Wyoming	45	60	70	107	107	86	118	136	147	156
Total	139	184	212	273	246	197	263	285	304	377
Total U.S.	891	1,018	1,112	1,381	1,559	1,535	1,842	2,082	1,979	2,683

APPENDIX I

BEST DOCUMENT AVAILABLE

SAMPLING ERROR DETAILS

Types of Leases in Estimated Population

Lease type	Estimated number	Sampling error
Noncompetitive		
Simultaneous (lottery)	44,213	3,085
Over-the-counter	27,677	3,040
Total	71,890	1,948
Competitive	1,736	945
Total	73,626	1,742

Leases Classified by Drilling Activity

Type of activity	Estimated number	Sampling error	Estimated percent	Sampling error
Drilled, with production	4,777	1,509	6.49	2.04
Drilled, but with no production	1,207	790	1.64	1.07
Subtotal leases drilled	5,984	1,681	8.13	2.28
Not drilled, but permit requested	461	400	.62	.54
No drilling activity	67,181	2,354	91.25	2.33
Total leases	73,626	1,742	100.00	-

Note: Sampling errors stated at the 95 percent confidence level.

BEST DOCUMENT AVAILABLE

Drilled Leases Classified by Age at Time of Drilling

Age of Lease	Estimated number	Sampling error	Estimated percent	Sampling error
Less than 5 years	3,041	1,212	50.82	14.69
5 years or more, but less than 10 years	2,112	1,045	35.29	14.15
10 years or more	831	650	13.89	10.13
Total leases drilled	5,984	1,681	100.00	-

Individual Speculator Involvement in Simultaneous Leases

	Simultaneous leases	Sampling error	Speculator original lessee	Sampling error	Speculator still lessee	Sampling error
Utah	5,926	1,767	3,065	1,416	1,635	1,083
New Mexico	6,961	1,519	5,354	1,490	1,606	988
Colorado	3,666	1,287	2,095	1,072	349	a/
Wyoming	27,660	1,558	14,753	1,763	2,859	962
Total	44,213	3,085	25,267	2,913	6,449	1,818

a/Subject to relatively high sampling error.

Note: Sampling errors stated at the 95 percent confidence level.

United States Department of the Interior

OFFICE OF THE SECRETARY
WASHINGTON, D.C. 20240

Mr. J. Dexter Peach
Director, Energy and
Minerals Division
General Accounting Office
Washington, D.C. 20548

JUN 1 0 1982

Dear Mr. Peach:

Thank you for the opportunity to comment on the draft report entitled "Lessee Activity that Should be Considered Before Changing Federal Onshore Oil and Gas Leasing." We are in general agreement with the conclusions and items suggested for monitoring that are contained in the report. Below are some general comments we would like to make for your consideration. Specific comments are contained as an enclosure.

It is the policy of this Department to make lands available to the public for mineral development within limitations imposed by States. As a means of implementing this policy the Bureau of Land Management has been directed to eliminate the backlog of lease applications by the end of this calendar year. Since this directive was issued, the backlog of cases under Bureau control has been reduced by over 4,500 from 13,400 pending in January. We fully expect to achieve the goal and eliminate the backlog entirely.

Once leases are issued we expect that lessees will diligently pursue development as dictated by market conditions. This means that prompt exploration and development is not always prudent and that to a certain degree industry can be expected to have holdings in excess of those being immediately developed. As your report correctly points out, areas of interest do change quickly.

The results of the first simultaneous filing period under the $75 filing fee indicate that the Federal government does gain revenues as a result of the increase in the filing fee. We will continue to evaluate the overall impact of fees and rentals on national energy production.

Sincerely,

Assistant Secretary for
Land and Water Resources

Enclosure

BEST DOCUMENT AVAILABLE

Attachment 1

SPECIFIC COMMENTS

The statement, which occurs throughout the report, that BLM's assignment backlog is "large and growing" is erroneous and must be corrected. We will be happy to provide GAO with up-to-date statistics prior to publication of the final report.

Page ii — We disagee with the conclusion on page ii that increased Federal drilling would likely be done at the expense of activity on non-Federal lands. This conclusion is inconsistent with the body of the report and an OTA study which indicates that drilling rig construction can easily meet any amount of industry demand.

Page 10 — The table concerning geophysical exploration is inaccurate in its listing of "other Geophysical activity." The main body of the report accurately discusses geophysical operations but the listing does not. Aerial magnetic and gravity surveys are considered geophysical. Surface /subsurface mapping, area history, soil and aerial photographic surveys, and surface/subsurface geology are quite certainly exploration activities but not geophysical exploration activities. The last category should be labeled "no exploration activity."

Page 17 — The table on page 17 correlating drilling activity in various States with the level of production in those States caused some puzzlement on the part of the GAO reviewers in the following pages as to what caused apparent discrepancies. However, GAO considered only oil production. Had they considered gas production also, the data fall into place very well.

p. 24 ¶4. — This sentence implies that the Bureau of Land Management deliberately allowed a backlog to develop. This is untrue. The development of the backlog can be attributed to several causes beyond the Government's control.

The Secretary's November 1, 1979 moratorium on leasing Military Lands developed a backlog of desire to lease. The subsequent lifting of the moratorium in August 1981 naturally generated a large number of new applications (approximately 9,000) over a short time span.

The February 1980 moratorium, because of fraud investigations, also brought leasing to a standstill. On resumption of leasing in June 1980, the State Offices had to re-certify the qualifications of all applicants as well as the qualifications of thousands of parties with lease assignments pending.

GAO note: Page references in this appendix have been altered to reflect the pagination of the final GAO report.

BEST DOCUMENT AVAILABLE

APPENDIX III

Historically, BLM State Offices have been understaffed due to personnel and budgetary constraints. In 1973, during the first energy crisis, the demand for oil and gas leases began to escalate. The work involved in processing lease applications requires trained professionals as well as trained supporting staffs. These manpower problems further exacerbated the leasing backlog problem.

Prior to the 1973 OPEC oil embargo and subsequent energy crisis, the Wilderness Act of 1964; the National Environmental Policy Act and the Federal Land Policy and Management Act all added requirements that made it virtually impossible to process lease applications as quickly as had been possible previously.

Deregulation of oil prices in 1981 further added to the surge of new applications that flooded the State Offices.

Partial deregulation of gas prices, particularly for deep and tight gas areas, has also had an effect on the demand for leases on Federal lands. If gas is deregulated completely it will also add further to the demand.

We have however, taken a number of administrative actions during the last year to eliminate the backlog. Significant progress has been made as the BLM controlled backlog has been reduced by about 50 percent - Our goal is to have it eliminated entirely by December 1982.

Revised regulations have made it possible to deal with the backlog of assignments to the extent that this backlog should also be under control within the next 6 to 10 months.

Page 26 We agree that there are apparently fewer extensions due to unitization abuse taking place than has been alleged. However, we contend that there are enough instances of unearned lease extensions, i.e., those which result without any development activity by the lessees, to justify corrective statutory changes to insure that only earned extensions based on development will be granted.

Page 41 The discussion of "assignment bonus" and overriding royalties on page iii barely acknowledges their existence and says little as to their effect or as to whether they constitute a "market value" which should go to the Government rather than to the speculators. Many previous GAO reports have either directly or indirectly criticized the Department for not securing the maximum dollar value available from leasing and this report glosses over this by simply concluding on pages 41 that there is "no compelling reason that clearly calls for eliminating this involvement; "i.e., that of the speculator.

BEST DOCUMENT AVAILABLE

Page 39 The report suggests that an increased royalty rate might be a better measure of recovering fair market value but cautions that decisions not be made in this regard until the Secretary's economic analysis is completed. The Secretary has requested further study on royalty rates. While this study is being conducted, the present royalty structure will remain in force.

Page 36 We disagree with the suggestion that the filing fee will cause hardship to independent producers. It could cause independents to file on fewer parcels and thereby reduce their inventories, but there is no evidence that the higher filing fees will adversely impact the ability of independents to undertake exploration and development.

Page 42 The last line on the page advises "the problem is getting worse..." "The problem," upon first reading, seems to refer to fraud, not to the backlog of lease assignments and applications. We suggest rewriting the sentence so the "problem" is clearly identified.

Page 7 We believe that the methodology used in determining drilling activity on the leases covered in the GAO sample is flawed; thus the conclusion that there was little drilling activity on Federal land leased between 1964 and 1979 in the four States may not be valid.

BLM issues a new lease number each time a specific tract is leased. During the study period from 1964 to 1979, a particular tract could have been leased two or more times, depending on possible lease relinquishments and expirations. The population of 73,626 leases in the GAO sample represents current leases only and does not include those leases which were relinquished or expired during the fifteen-year period. The appropriate population with which to study the drilling question would be the population of all leases which existed at any time during the 1964-1979 period. Using this larger population, one would conclude that more drilling takes place on Federal lands than indicated by the GAO report. In addition, ignoring the leases which were relinquished or expired (possibly because a dry hole was drilled) biases the results and leads to the unlikely conclusion that 80 percent of drilled leases are producing (see table on page 7).

(008965)

GPO 851-196